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**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Application of:

Tae-Young KIL

Serial No.: 09/755,166

Examiner: J. Gelin

Filed: 8 January 2001

Art Unit: 2681

For: SYSTEM AND METHOD FOR PROVIDING PUBLIC/PRIVATE MOBILE  
COMMUNICATION SERVICE

Appeal No. \_\_\_\_\_

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**ATTENTION: Board of Patent Appeals and Interferences**

**APPELLANT'S BRIEF (37 CFR §1.192)**

This brief is in furtherance of the Notice of Appeal filed in this case on 14 February 2005.

The fees required under §1.17(f) for the filing of the Appellant's Brief are dealt with in the accompanying transmittal letter.

**This brief is transmitted in triplicate (37 CFR §1.192(a)).**

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**APPEAL BRIEF**

**I. STATEMENT OF REAL PARTY IN INTEREST**

Pursuant to 37 CFR §1.192(c)(1) the real party in interest is:

SamSung Electronics Co., Ltd.  
416 Maetan-dong, Yeongtong-gu,  
Suwon-si, Gyeonggi-do,  
Republic of Korea

**II. RELATED APPEALS AND INTERFERENCES**

Pursuant to 37 CFR §1.192(c)(2), there are no appeals nor interferences known to the Appellant, the Appellant's legal representative, or the Assignee (real party of interest) which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**III. STATUS OF CLAIMS**

Claims 11-32 are pending; claims 11-19 have been allowed; claims 22, 23, 25, 26 and 30-32 have been objected to for depending from a rejected claim; and claims 20, 21, 24 and 27-29 are rejected and appealed herein.

**IV. STATUS OF AMENDMENTS AFTER FINAL REJECTION**

No amendments have been filed following the final rejection.

**V. SUMMARY OF THE INVENTION**

A public mobile communication network is commonly called a public land mobile network

(PLMN) and the private mobile communication network may be known as a personal communication network (PCN) or a private telephony network (PTN). As illustrated in FIG. 1, the public mobile communication system includes a plurality of mobile switching centers (MSCs)  $2_1-2_n$ , a plurality of base station controllers (BSCs)  $4_1-4_m$ , a plurality of base station transceiver (BTS) subsystems  $6_1-6_k$  and  $8_1-8_k$ , a plurality of mobile stations (MSs) 20, 22 and 24, and a HLR and VLR (Home Location Register and Visitor Location Register) 10. (see paragraph [0026] on page 6)

A communication service area for the base station transceiver subsystems  $6_1-6_k$  and  $8_1$  of the public mobile communication system will be called a public-only cell area, in order to distinguish it from the public and private common cell area 14. (see paragraph [0030] on page 7)

The public and private common cell 14 is set to provide a convenience of the communication service to a specific group. For example, when a certain company uses (occupies) one building, the area belonging to the building can be defined as the public and private common cell 14. The public and private common cell 14 is preferably defined by mutual agreement with the public mobile communication service provider. (see paragraph [0021] on page 5)

This is to have a private BTS (Base station Transceiver Subsystem)  $8_k$  in the public and private common cell 14 be recognized as a public base station transceiver subsystem from the viewpoint of the public mobile communication system. (see paragraph [0022] on page 5)

The private base station transceiver subsystem  $8_k$  will be referred to as pBTS, in order to distinguish the private base station transceiver subsystem  $8_k$  in the public and private common cell 14 from the base station transceiver subsystems belonging to the public mobile communication system, *i.e.*, the base station transceiver (BTS) subsystems  $6_1-6_k$  and  $8_1$  shown in FIG. 1. (see

paragraph [0023] on page 5)

The pBTS 8<sub>k</sub>, together with a mobile station (MS) 24 in the public and private common cell 14, forms a radio communication path, performs a function of managing the radio resources, and is connected to a BSC (Base Station Controller) 4<sub>m</sub> of the public mobile communication system through the public and private communication service unit 12. The public and private communication service unit 12 is connected to base station controller 4<sub>m</sub>, PSTN and ISDN (Public Switched Telephone Network and Integrated Services Digital Network) 16, and IP (Internet Protocol) network 18. The public and private communication service unit 12 optionally provides the public mobile communication service and the private mobile communication service to the mobile stations (e.g., the mobile station 24) in the public and private common cell 14. (see paragraph [0024] on pages 5-6)

If the mobile station 24 is registered in the public and private communication service unit 12 to be provided with the private mobile communication service, the mobile station 24 can be provided with not only the public mobile communication service but also the private mobile communication service. However, if the mobile station 24 is not registered in the public and private communication service unit 12 for the private mobile communication service, the mobile station 24 can be provided with only the public mobile communication service. In addition, the public and private communication service unit 12 also performs a wire communication service with the PSTN and ISDN 16 and the IP network 18. (see paragraph [0025] on page 6)

Referring first to FIG. 2, the public and private communication service unit 12 of FIG. 1 is comprised of a private branched exchange (PBX) 30, a private base station controller (pBSC) 40,

and a call manager (CM) 50. The PBX 30 includes a switch 32 and an E1 interface 34, and the pBSC 40 includes a pCIN (private Communication Interconnection Network) 42 and a TSB (Transcoder & Selector Bank) 44. (see paragraph [0033] on page 8)

The call manager 50 supports a registration function for a private mobile communication network subscriber and a function setting function, and has a visitor location register management function for roaming the mobile station registered in the private mobile communication network. (see paragraph [0048] on page 12)

In order to perform such functions, the call manager 50, as shown in FIG. 4, includes such software blocks as a DCI (Data Communication Interface) 52, a pBTMR (pBTS Message Router) 54, a pBSC (private Base Station Controller) 56, a pMSC (private Mobile Switching Center) 58, a PMIC (PBX Mobile Interface Controller) 60, an SMC (Short Message service Controller) 62, a pVLR (private visitor location register) 64, a WSM (Wireless System Manager) 66 and a LIM (LAN Interface Module) 68. (see paragraph [0049] on page 12)

The pBTMR 54 is a module for managing path designation over every message to be processed in the pBTS 8<sub>k</sub>. More specifically, the pBTMR 54 designates a signaling message path for public and private call origination and termination services of the mobile station by consulting a router table therein, and designates a message path for a maintenance service of the pBTS 8<sub>k</sub>. In addition, the pBTMR 54 communicates with the pVLR 64. (see paragraph [0051] on page 12)

Providing both the public mobile communication service and the private mobile communication service is performed by analyzing every message being applied to the public and private communication service unit 12, transparently transmitting the messages for the public mobile

communication network to the public base station controller, and routing the messages for the private mobile communication network to a module in the call manager 50. Such a path designation function is performed by a module of the pBTMR (pBTS Message Router) 54 in the call manager 50. When such events as call origination, call termination, location registration and short message service (SMS) events occur, the pBTMR 54 analyzes the corresponding event message and then designates a path according to the analysis. The pBTMR 54 includes a router table in which designated path information is mapped in association with the respective events, and upon receipt of a message, transmits the received message to the corresponding device and module by consulting the router table. (see paragraph [0066] on page 15)

The public and private communication service unit 12 should determine, when the mobile station user now located in the public and private common cell area 14 originates a call, whether the mobile station user desires to be provided with the private mobile communication service or the public mobile communication service. To this end, when the user desires to be provided with the private mobile communication service, the mobile station user adds preset identification information for service identification to the originating number (*i.e.*, a phone number of the called party), and the public and private communication service unit 12 determines whether an origination call requests the public mobile communication service or the private mobile communication service, depending on the identification information. (see paragraph [0078] on page 18-19)

In addition, upon receipt of a telephone call, the public and private communication service unit 12 determines whether the telephone call is a call for the public mobile communication service or a call for the private mobile communication service. If the telephone call is a call for the public

mobile communication service, the public and private communication service unit 12 transparently bypasses the telephone call to the pBTS 8<sub>k</sub>. Otherwise, if the telephone call is a call for the private mobile communication service, the public and private communication service unit 12 provides the private mobile communication service. (see paragraph [0079] on page 19)

## **VI. ISSUES**

Whether claims 20, 21, 24, and 27-29 are patentable under 35 U.S.C. §102(a) over Ku..

## **VII. GROUPING OF CLAIMS**

Claim 20 stands or falls alone. Claims 21, 24, and 27-29 stand or fall with claim 20.

## **VIII. ARGUMENT**

In order for an anticipation rejection to be proper, the anticipating reference must disclose exactly what is claimed. "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). "The identical invention must be shown in as complete detail as is contained in the ... claim." *Richardson v. Suzuki Motor Co.*, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). Note here that the Examiner has not relied on "inherency," accordingly, each and every element must be expressly described in Ku.

The present invention discloses that a private base station transceiver subsystem (BTS) used

in a public/private common cell area is used as one of the base stations in a general public mobile communication network, and provides a public/private mobile communication service unit for performing both public and private mobile communication services between the private BTS and a public base station controller (BSC). In the present invention, when a requested service by a mobile terminal is a public mobile communication service, the public mobile communication service is transparently transmitted to the public BSC or the private BTS. When the requested service is a private mobile communication service, the system accesses a network corresponding to the corresponding private mobile communication service. Therefore, in the case of the public mobile communication service, the system of the present invention accesses a network including a public BSC and a public mobile switching center (MSC) as well as a private BTS, and in the case of the private mobile communication service, the system accesses to a network between mobile terminals within the public/private common cell area covered by a private BTS.

Of the rejected claims, 20 and 28 are independent. Claim 20 calls for:

- *a public/private communication service unit connected to a particular one of the public mobile communication network's base station controllers (BSCs).*

The Examiner refers to Ku's private automatic branch exchange (PABX) 26 **and** mobile switching center (MSC) 25 with respect to *a public/private communication service unit*. Additionally, the Examiner refers to Ku's base station controller (BSC) 24 with respect to *a particular one of the public mobile communication network's base station controllers (BSCs)*.

Note that Ku's MSC 25 is similar to MSC 2<sub>1</sub> in Appellant's Fig. 1 which is outside the public/private cell area 14 formed by private base station transceiver subsystem (pBTS) 8<sub>k</sub>. Here,



claim 20 calls for:

- *at least one private base station transceiver subsystem (pBTS) connected to the public/private communication service unit, for forming a public/private common cell area.*

This feature refers to public/private cell area 14 formed by private base station transceiver subsystem (pBTS) 8<sub>k</sub>.

The Examiner refers to Ku's wireless transceiver 21. Note that Ku's wireless transceivers 21 form special cell areas Ax (A1 and A2). These special cell areas are private cell areas not public/private common cell areas. Once a mobile terminal MP, having a private frequency  $f_2$ , move out of area Ax, the mobile terminal changes from the private frequency to a general frequency  $F_1$  and BTS 29, as shown in Ku's Figs. 2 and 3, processes those mobile phone (MP) calls in area B.

Therefore, wireless transceiver 21 does not meet the well known definition of a "base station transceiver." That is, a **base station transceiver** is defined by the art of mobile communications, as a radio transceiver that defines a cell and coordinates the radio-link protocols with the mobile device. The BTS is the networking component of a mobile communications system from which all signals are sent and received. A BTS is controlled by a base station controller and includes a particular BSC interface connected between the BTS and BSC.

A **base station controller** (BSC) is used to control groups of BTSs, provide mobility management for mobile stations, anchor airlink protocols and provide connection to a mobile switching center (MSC). The composite collection of one or more BTS and the associated BSC will form a **base station system** (BSS).

In Ku, transceivers 21 are not controlled by a base station controller. As can be see by Ku's

Fig. 2, transceivers 21 form special cell areas A1 and A2, and are connected via concentrator/distributor 22 to a pico base station transceiver subsystem 23. It is this pico base station transceiver subsystem 23 that is controlled by base station controller 24. Ku's base station controller 24 is similar to BSCm (4<sub>m</sub>) in Appellant's Fig. 1 which is outside the public/private cell area 14 formed by private base station transceiver subsystem (pBTS) 8<sub>k</sub>.

Accordingly, Ku's transceivers 21 are not, by definition, base station transceivers.

Claim 20 requires that:

- *if a message received for a service requested by a particular one of the mobile stations (MSs) is a public mobile communication service message, the public/private communication service unit provides a path designation to transparently transmit the received message to the public mobile communication network's base station controller (BSC) connected to the public/private communication service unit; and claim 28 calls for providing path designation to transparently transmit a received message to the base station controller (BSC) connected to the public/private communication service unit, if the message received for the service requested by the mobile station (MS) is a public mobile communication service message.*

In Ku, there is already an established path between the BSC 24 and MSC 25, wherein the Examiner has indicated that (PABX/MSC) 25 form the claimed *public/private communication service unit*.

As noted above, however, MSC 25 is outside the *public/private common cell area 14* formed by the claimed *private base station transceiver subsystem (pBTS) connected to the public/private communication service unit*. Therefore, Ku's MSC 25 corresponds to the MSC set forth in the preamble of claim 20 which forms a part of the *public-only cell area* defined by the preamble, and thus does not anticipate the claimed *a public/private communication service unit*.

Moreover, a pico BTS for only a private network ( hereinafter, referred to a private-only pico BTS for a private-only network) in Ku is not used as both public/private common cell area, as the BTS of the present invention. Also, the private-only pico BTS of Ku is not used as one of a plurality of BTSs in the public mobile communication network as in the present invention. That is, the private-only pico BTS of Ku is for only the private network and thus the private-only pico BTS and the public BTS are separately needed. However, the present invention has an advantage that one base station transceiver is used for both the public and private services.

Additionally, Ku discloses that upon receipt of a signal of a call, public MSC (25) determines whether the received call signal is for a general base station or a private-only pico BTS. However, in the present invention, a public MSC 2<sub>1</sub> does not perform Ku's operation as above. The MSC of the present invention recognizes the private BTS as one of public base stations. Thus, the present invention is different from Ku in that the public MSC processes all calls as a general public mobile communication call.

Further, the present invention discloses a mobile communication service unit located between the private BTS and the public BSC for performing both private/public mobile communication services, in which the mobile communication service unit determines whether it is the private mobile communication service or the public mobile communication service. However, Ku does not disclose such a mobile communication service unit at all.

Also, in the present invention, when the private mobile communication service is performed, the system accesses to the network in the private BTS, without passing through a BSC (4<sub>m</sub>) as in Ku.

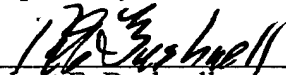
In Ku, when a private call communication is terminated, since a public MSC is involved in calculating a communication charge, a charge calculation is performed by applying a private telephone charge which is mutually agreed between subscribers of a private network and communication enterprises. However, in the present invention, since a private mobile

communication service is provided in the private BTS, the public MSC is not involved. In the private MSC, the communication charge agreement between subscribers and communication enterprises as Ku is not needed.

Also, Ku discloses dividing a private call communication frequency f2 and a general mobile communication frequency f1, using the frequency f2 for the private-only network and using the frequency f1 for general mobile communication. However, in the present invention, it is not necessary to divide such as above, and rather the general mobile communication frequency is used for the public and private mobile communication service as it is.

Accordingly, the differences between the claimed invention of claim 20 and Ku, as well as the advantages of the present invention over Ku, have been outlined above. Therefore, it is deemed that Ku fails to anticipate claim 20, and as such, the rejection should not be sustained. Claim 28 is similar to claim 20, and as such, is also deemed to not be anticipated by Ku. Accordingly, the rejection of claims 20, 21, 24, and 27-29 should not be sustained.

Respectfully submitted,

  
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**IX. APPENDIX**

**CLAIMS UNDER APPEAL**

1           20. (new) A public/private mobile communication system for providing a public/private  
2 mobile communication service in association with a public land mobile network (PLMN) including  
3 a plurality of mobile stations (MSs), at least one mobile switching center (MSC), a plurality of public  
4 mobile communication network's base station controllers (BSCs) connected to the mobile switching  
5 center (MSC), and a plurality of public mobile communication network's base station transceiver  
6 subsystems (BTSs) connected to each of the base station controllers (BSCs), for forming a  
7 public-only cell area, the system comprising:

8           a public/private communication service unit connected to a particular one of the public  
9 mobile communication network's base station controllers (BSCs); and

10           at least one private base station transceiver subsystem (pBTS) connected to the public/private  
11 communication service unit, for forming a public/private common cell area;

12           wherein if a message received for a service requested by a particular one of the mobile  
13 stations (MSs) is a public mobile communication service message, the public/private communication  
14 service unit provides a path designation to transparently transmit the received message to the public  
15 mobile communication network's base station controller (BSC) connected to the public/private  
16 communication service unit, and if the received message is a private mobile communication service  
17 message, the public/private communication service unit provides a path designation to a  
18 corresponding private mobile communication service.

1           21. (new) The public/private mobile communication system of claim 20, wherein the  
2 public/private communication service unit comprises:

3 a call manager for determining whether a message received for a service requested by a  
4 particular one of the mobile stations (MSs) is a public mobile communication service message or  
5 a private mobile communication service message, and providing the path designation according to  
6 the determination result; and

7 a communication path former for forming a communication path for a corresponding service  
8 under the control of the call manager.

1 24. (new) The public/private mobile communication system of claim 21, wherein the call  
2 manager further comprises a manager for maintaining and managing a mobile communication  
3 service function provided by the public/private communication service unit.

1 27. (new) The public/private mobile communication system of claim 20, wherein the  
2 public/private communication service unit is connected to a public switched telephone network  
3 (PSTN), an integrated services digital network (ISDN), or an Internet protocol (IP) network.

1 28. (new) A method for providing a public/private mobile communication service in  
2 association with a public land mobile network (PLMN) including a plurality of mobile stations  
3 (MSs), at least one mobile switching center (MSC), a plurality of public mobile communication  
4 network's base station controllers (BSCs) connected to the mobile switching center (MSC), and a  
5 plurality of public mobile communication network's base station transceiver subsystems (BTSs)  
6 connected to each of the base station controllers (BSCs), for forming a public-only cell area, the  
7 method comprising the steps of:

8 providing a public/private communication service unit connected to a particular one of the  
9 public mobile communication network's base station controllers (BSCs), and at least one private

10 base station transceiver subsystem (pBTS) connected to the public/private communication service  
11 unit, for forming a public/private common cell area;

12 determining by the public/private communication service unit whether a message for a  
13 service requested by a particular one of the mobile stations (MSs) is received or not; and

14 providing path designation to transparently transmit a received message to the base station  
15 controller (BSC) connected to the public/private communication service unit, if the message received  
16 for the service requested by the mobile station (MS) is a public mobile communication service  
17 message, and providing path designation to a corresponding private mobile communication service  
18 if the received message is a private mobile communication service message.

1 29. (new) The method of claim 28, further comprising the step of registering a location of  
2 the mobile station so that the public and private mobile communication can be provided.